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MEMORANDUM FOR: TALENT Control Officers
(See Distribution)

SUBJECT: Camera Information for Mission 9029, KH-3 Camera System

1. The following technical information necessary for the reduction of quantitative data obtained from photography of Mission 9029 is forwarded for your information.

a. This photography involves the use of three cameras: a main camera, a port horizon camera, and a starboard horizon camera.

b. Operational Focal Lengths

(1)	Main lens	609.752 mm
(2)	Port horizon lens	89.42 mm
(3)	Starboard horizon lens	89.63 mm

Definition: "Operational focal length" is defined as the distance from the main lens nodal point to the film surface as measured on the lens bench, and the data reduced for a vacuum condition. (Operational focal length is equivalent focal length corrected for environment.)

c. Lens Distortion

(1) Main lens (pincushion)
Not measured on this lens

(2) Port horizon lens

a. radial	0.000 mm at 10° 0.023 mm at 20°
b. tangential	0.009 mm max.

(3) Starboard horizon lens

a. radial	0.004 mm at 10° 0.038 mm at 20°
b. tangential	0.0025mm max.

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d. Depression Angle of Horizon Cameras Relative to Nominal Main Camera

(1)	Port horizon camera	14deg. 57min. 15sec.
(2)	Starboard Horizon camera	17deg. 22min. 28sec.

e. Image Motion Compensation

Ramp 4 — Passes 2D and 5D
Ramp 5 — All other passes

Ramp 4	Beginning	End
Cycle Period (sec)	4.16	2.85
Scan Velocity ("/sec)	36.26	52.92
IMC Velocity ("/sec)	.487 Cos Θ	.711 Cos Θ

Ramp 5		
Cycle Period (sec)	4.10	2.56
Scan Velocity ("/sec)	36.79	58.92
IMC Velocity ("/sec)	.494 Cos Θ	.791 Cos Θ

Ramp information pertinent to mission will be forwarded as soon as available.

f. Filter and Exposure Data

(1)	Main lens	Filter	Type, Wratten 21
		Aperture	f/3.8
		Exposure	1/380 sec (app. mean)
		Slit width	0.150 inches
(2)	Horizon lens	Filter	Type, wratten 25
		Aperture	f/6.8
		Exposure	1/200 second

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g. Resolution Capabilities

(1) Main lens - (avg.) 151.6 l/mm on SO 132 Film

(2) Port horizon lens - (avg.) 37 l/mm on XX Film

(3) Starboard horizon lens - (avg.) 30.4 l/mm on XX Film

h. Timing Marks

There will be no timing marks on this Mission.

i. Film Data

Split. 900 ft. SO 132, 6200 feet SO 130,
500 ft. SO 132

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TALENT Control Officer
National Photographic Interpretation Center

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